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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/909,330	07/19/2001	Dale C. Flanders	1035us	9626
25263	7590	05/27/2005	EXAMINER	
J GRANT HOUSTON AXSUN TECHNOLOGIES INC 1 FORTUNE DRIVE BILLERICA, MA 01821			NGUYEN, DUNG T	
			ART UNIT	PAPER NUMBER
			2828	

DATE MAILED: 05/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

SM

<b>Office Action Summary</b>	<b>Application No.</b> 09/909,330	<b>Applicant(s)</b> FLANDERS, DALE C.	
	<b>Examiner</b> Dung (Michael) T. Nguyen	<b>Art Unit</b> 2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 February 2005.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16, 18-20 and 29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 6-16, 18-20 and 29 is/are rejected.
- 7) ☒ Claim(s) 3-5 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Response to Amendment***

The declaration filed on 02/03/05 under 37 CFR 1.131 is sufficient to overcome the Daiber reference.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1-2, 7, 9-10, and 29 are rejected under 35 U.S.C. 102(a) as being anticipated by Sesko et al. (US6205159).

With respect to claims 1 and 29, Sesko show in Fig.2A a semiconductor laser, comprising: a semiconductor gain medium 1 for a linear laser cavity E; an intracavity filter 3-4 having a filter function specifying a frequency of operation of the laser (col.11, 1.43-58 and col.12, 1.3-35); and modulation system 12 that modulates an optical length of the laser cavity (col.10, 1.47-50); wherein the laser

cavity oscillates in only a single longitudinal mode (col.4, 1.49), and wherein a temperature of the system is allowed to fluctuate with ambient temperature (it is inherent that the laser system must operate within the ambient temperature.

Otherwise, the system will be degraded due to the heat generated during operation) while the modulation system modulates the optical length of the laser cavity to change spectral locations of longitudinal modes of the laser cavity.

With respect to claim 2, it is inherent that the intracavity filter is angled relative to an axis of the cavity to avoid coupling of light reflected by the intracavity filter into the semiconductor gain medium. Otherwise, the performance of the gain medium will be distorted by the reflected light.

With respect to claim 7, Sesko disclose in Fig.2A the antireflection coated front facet 22 and a backfacet coated to be reflective 21.

With respect to claim 9, Sesko disclose in Fig.2A a front monitor 9.

With respect to claim 10, Sesko disclose in Fig.2A a partial reflector 11 (col.15, 1.15-16).

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sesko et al. (US6205159) in view of Takara et al. (US5646774). Sesko disclose all limitations of the claim except for the semiconductor optical amplifier (SOA). Takara teach the SOA 3 in Fig.1. For the benefit of substituting a semiconductor gain medium with a semiconductor optical amplifier, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Sesko a SOA as taught by Takara.

Claims 8, 11-13, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sesko et al. (US6205159) in view of Ohshima et al. (US4998256).

With respect to claim 8, Sesko disclose all limitations of the claims except for the back diode. Ohshima teach the monitor diode 18 (col.1, 1.43). For the benefit of detecting and controlling the laser light, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Sesko what is taught by Ohshima.

With respect to claims 11-13, Ohshima show in Fig.9 a hermetic cover 43 and a window 431. For the benefit of isolating the semiconductor laser from the external atmosphere and transmitting the laser light out of the confined enclosure (col.9, 1.44-56), it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Sesko what is taught by Ohshima.

With respect to claim 16, Ohshima disclose the temperature of the laser system is uncontrolled by using inert gas in the laser system cover (col.9, 1.64-67). For the benefit of eliminating the temperature control within the laser system cover externally to maintain the efficiency of the laser (col.9, 1.64-65), it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Sesko what is taught by Ohshima.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sesko et al. (US6205159) in view of Ohshima et al. (US4998256) and further in view of Blauvelt et al. (US5127072). Sesko and Ohshima disclose all limitations of the claim except for an isolator installed on the bench. Blauvelt teach an isolator

installed on the bench (col.3, 1.21-23). For the benefit of preventing the laser light reflecting back to the gain medium (col.3, 1.24-25), it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Sesko and Ohshima what is taught by Blauvelt.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bylsma (US6441940) in view of Ohshima et al. (US4998256) and further in view of Gordon et al. (US4818053). Sesko and Ohshima disclose all limitations of the claim and the optical fiber pigtail 14 (Fig.9 in Ohshima) but lack the focus lens installed on the bench. Gordon teach the focus lens installed on the bench (col.2, 1.23-29). For the benefit of focussing the laser light out from the cover through the window and providing the accuracy of the optical emission (col.2, 1.28-29), it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Sesko and Ohshima what is taught by Gordon.

Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sesko et al. (US6205159) in view of Goossen (US6424450).

With respect to claim 18, Sesko disclose all limitations of the claim except for the MEMS structure. Goossen teaches the MEMS structure (col.1, 1.30). For the benefit of varying the intensity of the optical signal (col.1, 1.20), it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Sesko what is taught by Goossen.

With respect to claim 19, Goossen discloses a membrane structure (col.1, 1.34). For the benefit of overlapping the optical cavity (col.1, 1.36-37), it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Sesko what is taught by Goossen.

With respect to claim 20, Goossen discloses the modulator comprises a semiconductor substrate (col.1, 1.35). For the benefit of stably supporting the modulator' it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Sesko what is taught by Goossen.



*Allowable Subject Matter*

Claims 3-5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Communication Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung (Michael) T Nguyen whose telephone number is (571) 272-1949. The examiner can normally be reached on 8:30 - 17:00.

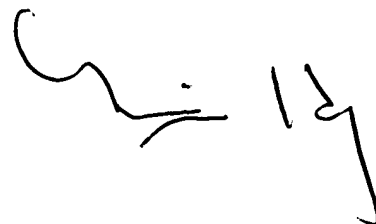
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Min Harvey can be reached on (571) 272-1835. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3329.

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Michael Dung Nguyen

A handwritten signature in black ink, appearing to read 'Mingsun Chen'.

MINGSUN CHEN  
PRIMARY EXAMINER